Fig.1

load condition No.	electron beam		conventional fixed target			vibrating target of invention (5 μm vibration)		
	collision diameter s[μm]	power [W]	collision area s[μm²]	temperature T[K]	life [hour]	collision area s[μm²]	temperature T[K]	life [hour]
1	1	0.32W	0.79	2,576	142	5.79	1,140	4.7E+27
2	1	0.35W	0.79	2,790	7	5.79	1,219	1.5E+21
3	1	0.86W	0.79	6,417	(evaporate)	5.79	2,557	189
4	1	1.0W	0.79	7,413	(evaporate)	5.79	2,925	1.3
						(10.79)	(2,217)	(82,381)
5	0.1	0.24W	0.0079	17,371	(evaporate)	0.51	2,423	169
		(0.32W)				1.01	(2,309)	(1,341)

Fig.2
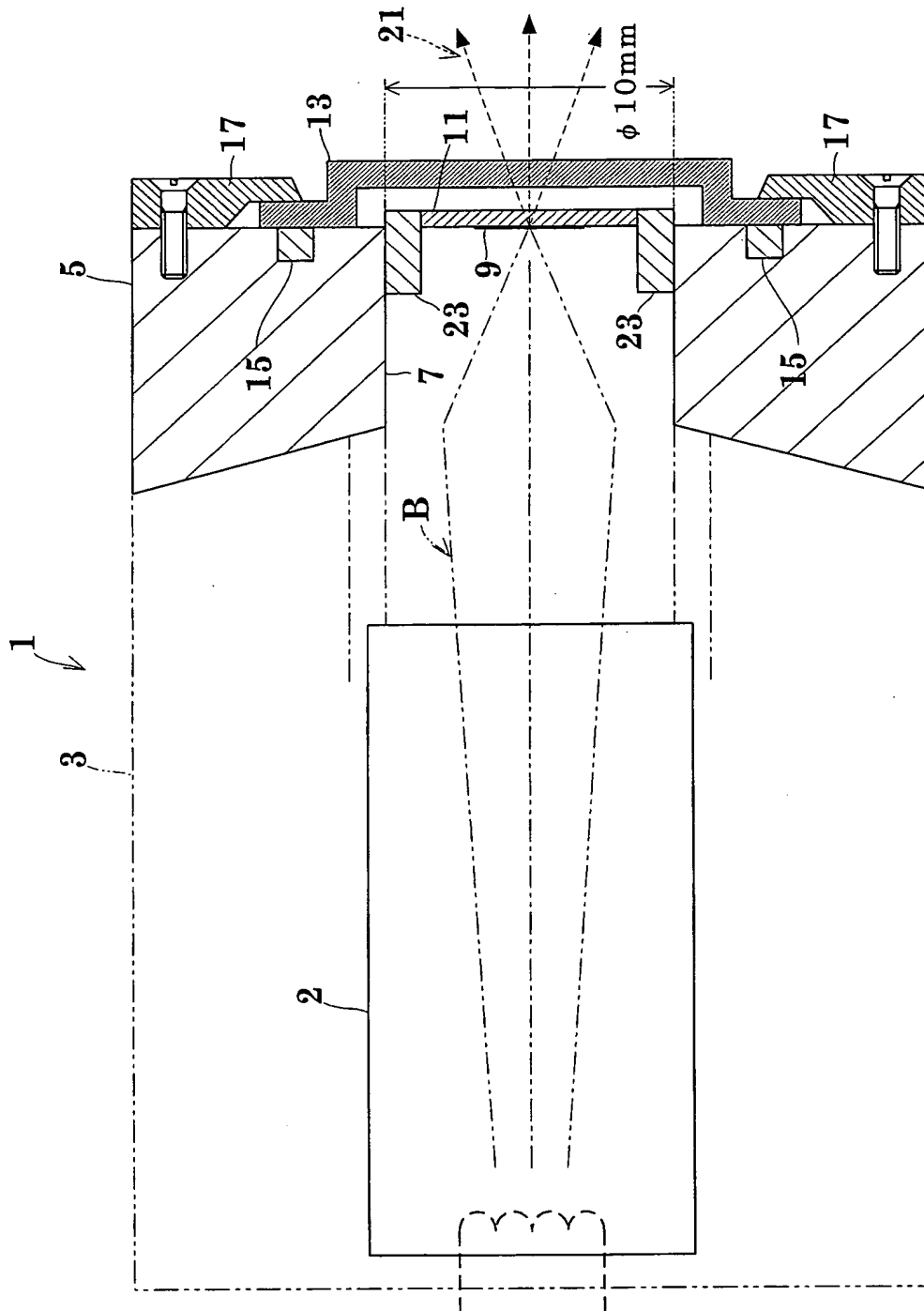
Fig.3

control unit 29

vibration controller 25

high voltage generator 27

21

1

3

2

Fig.4

Fig.5

Fig.6

Fig.7

Fig.8

B

9

Fig.9

B

6μm

9

6μm

B

Fig.10A

Fig.10B

Fig.11B

5

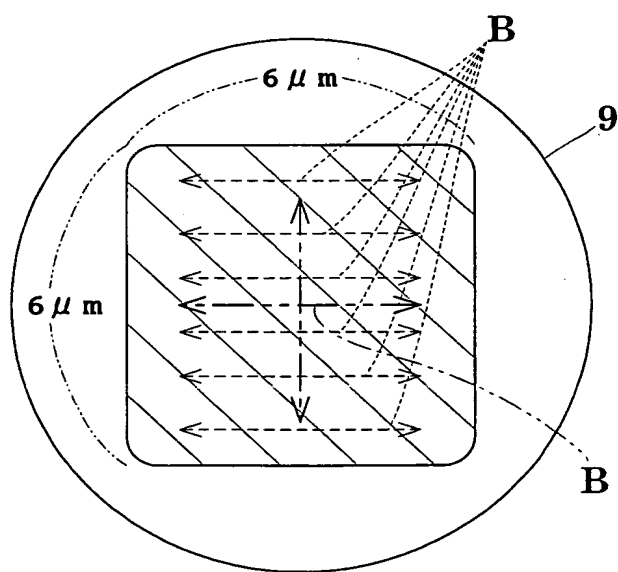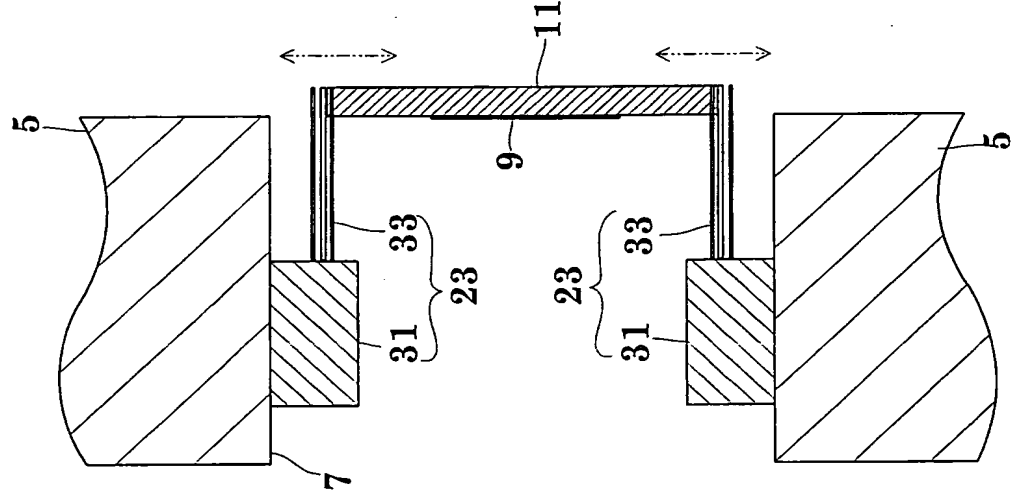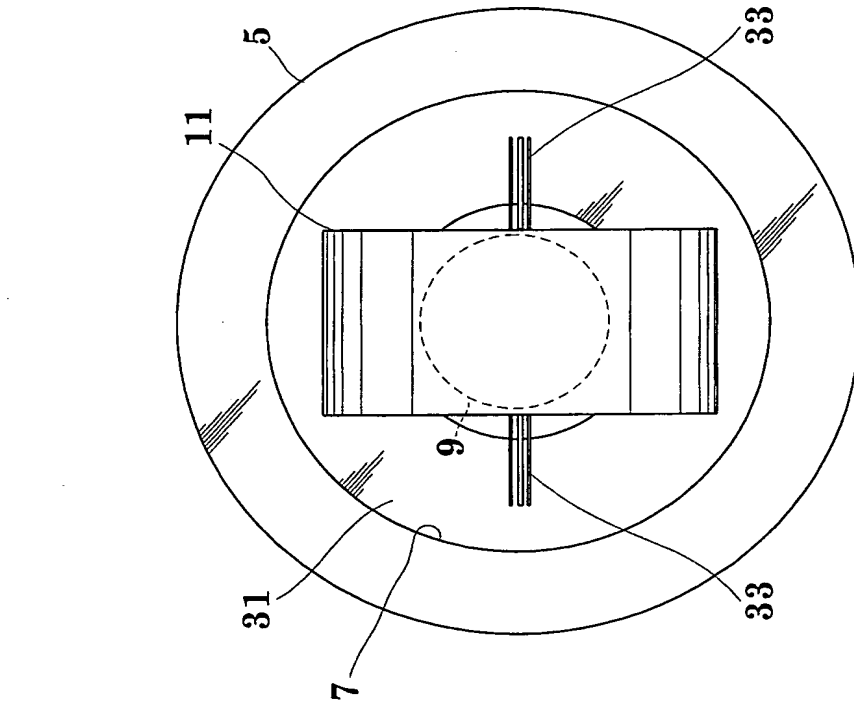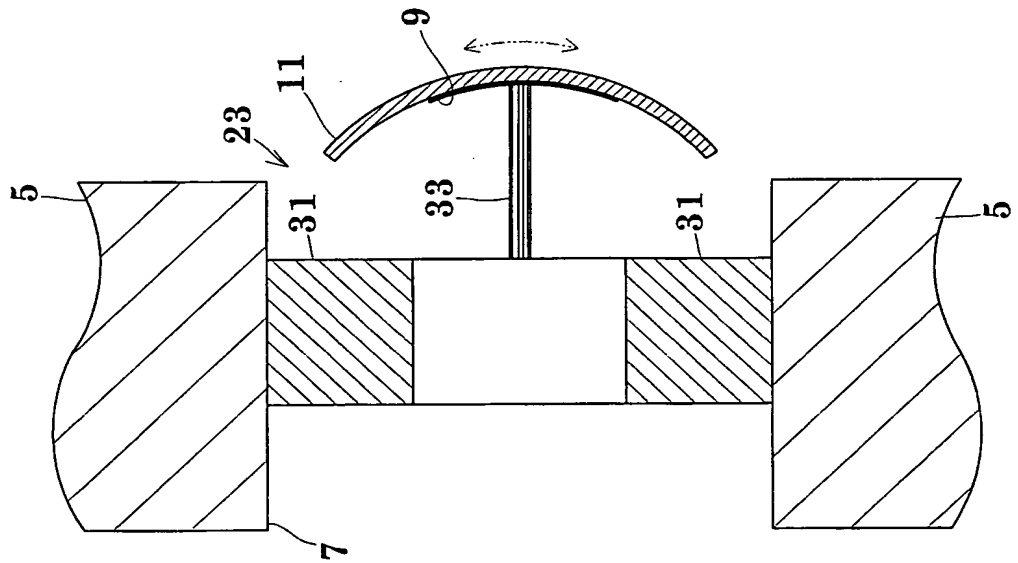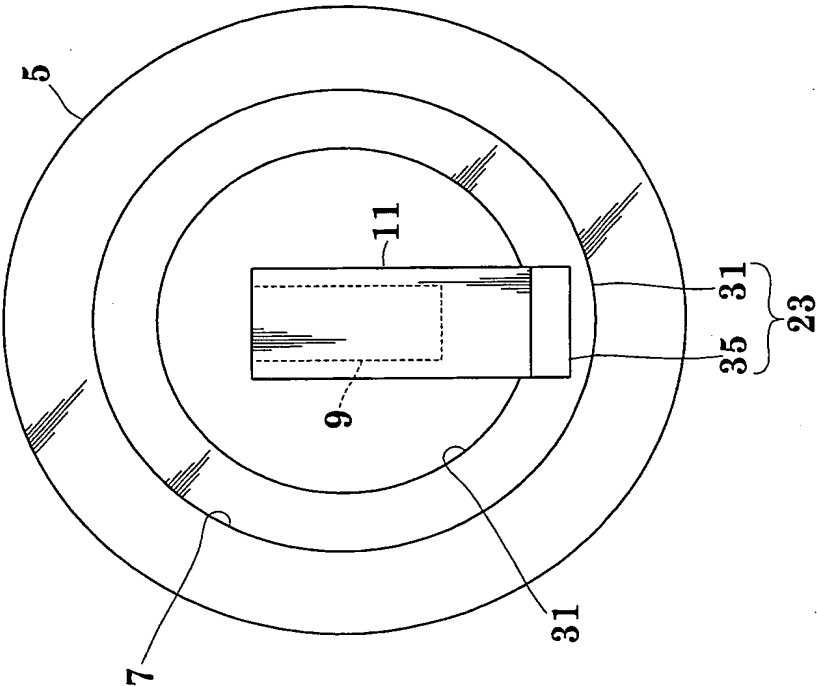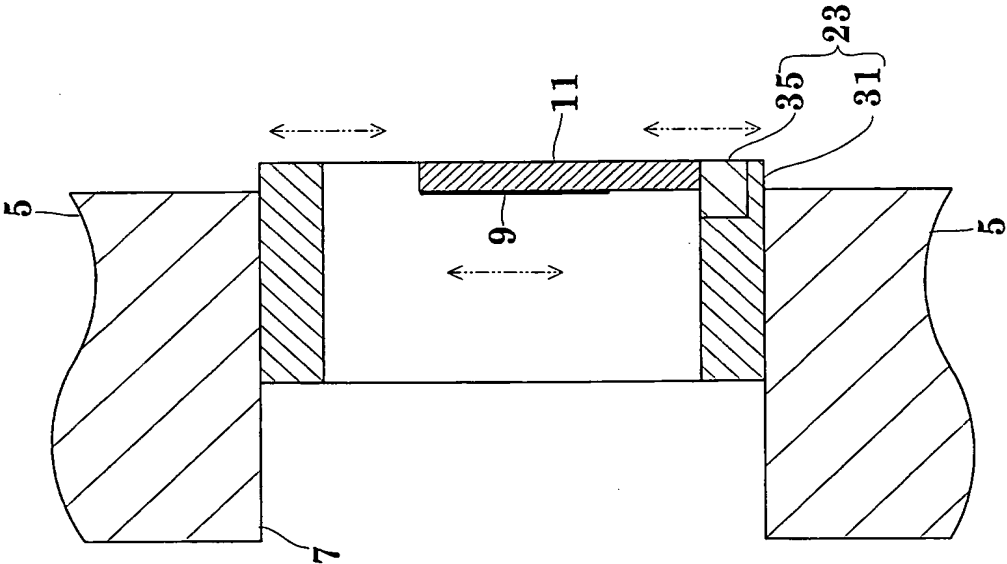11

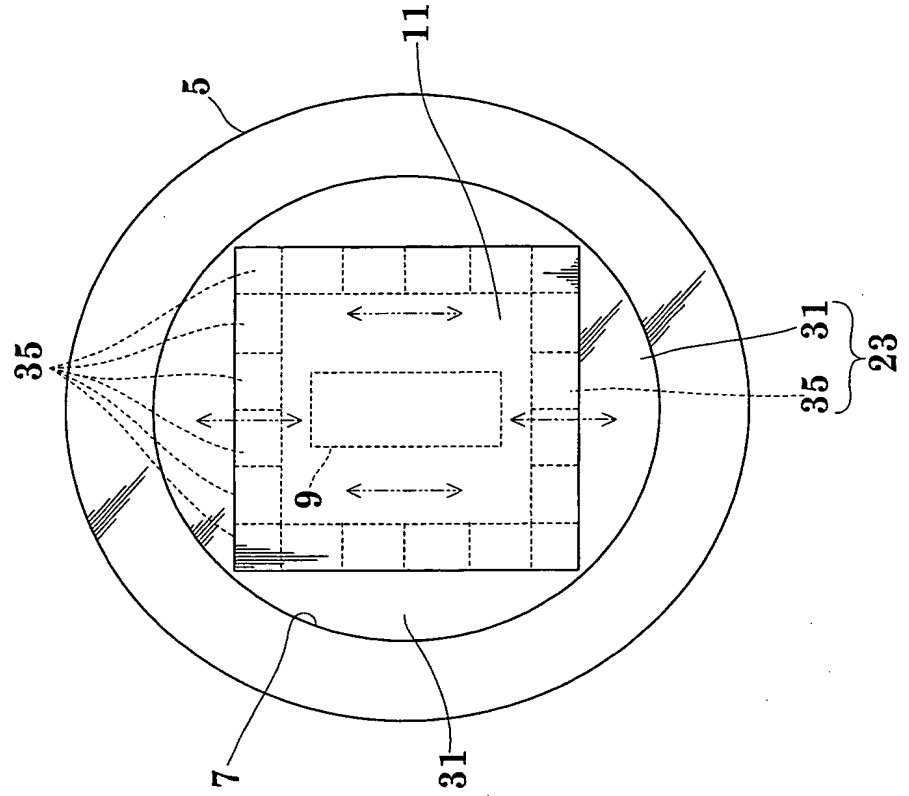33

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Fig.11A

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5
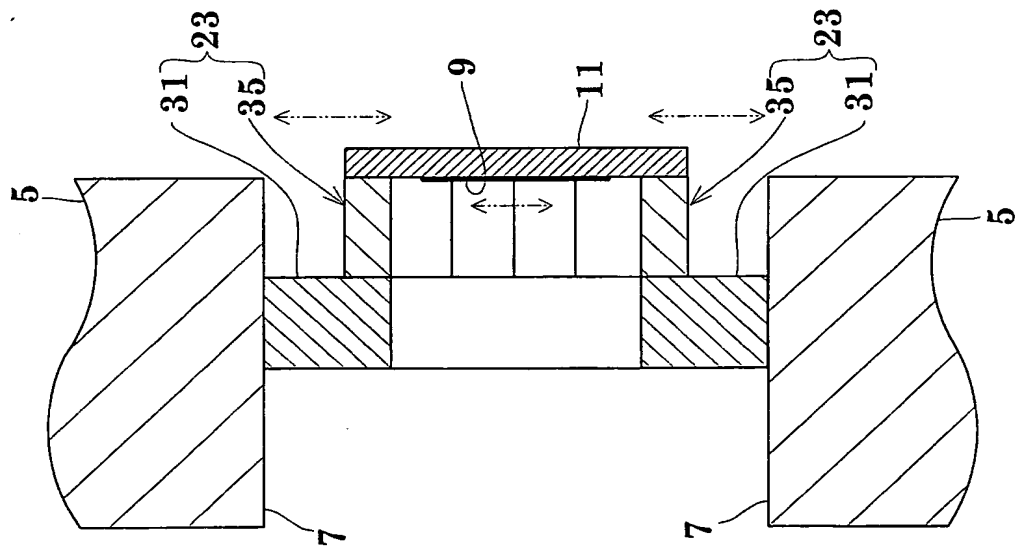
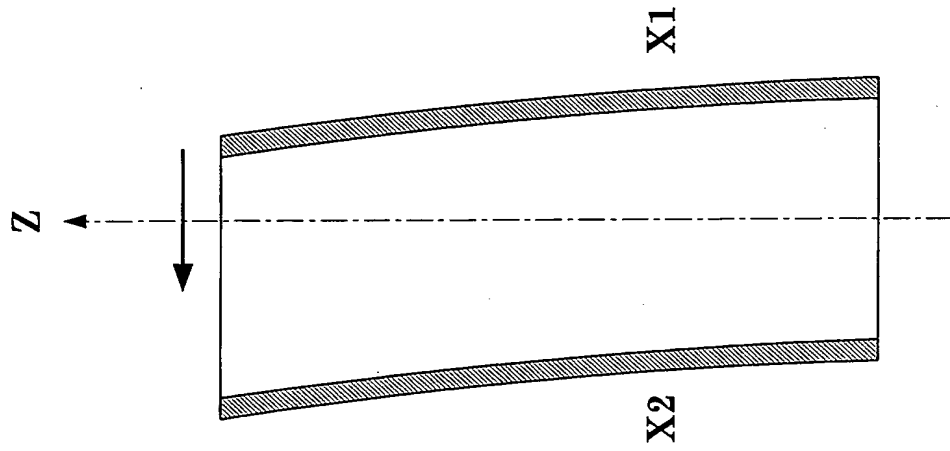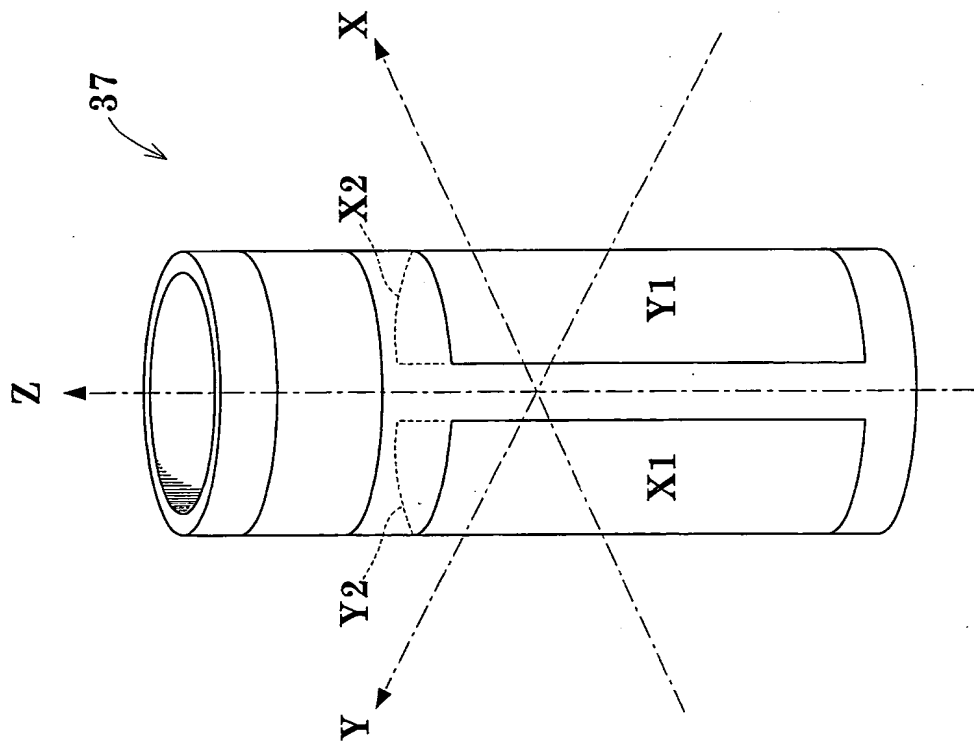11

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Fig.12B
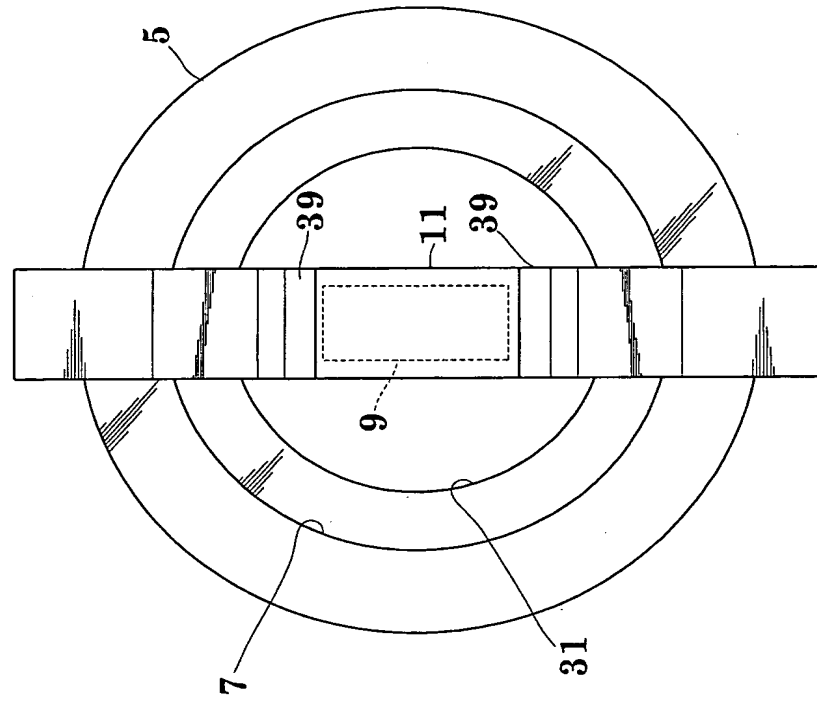
Fig.12A
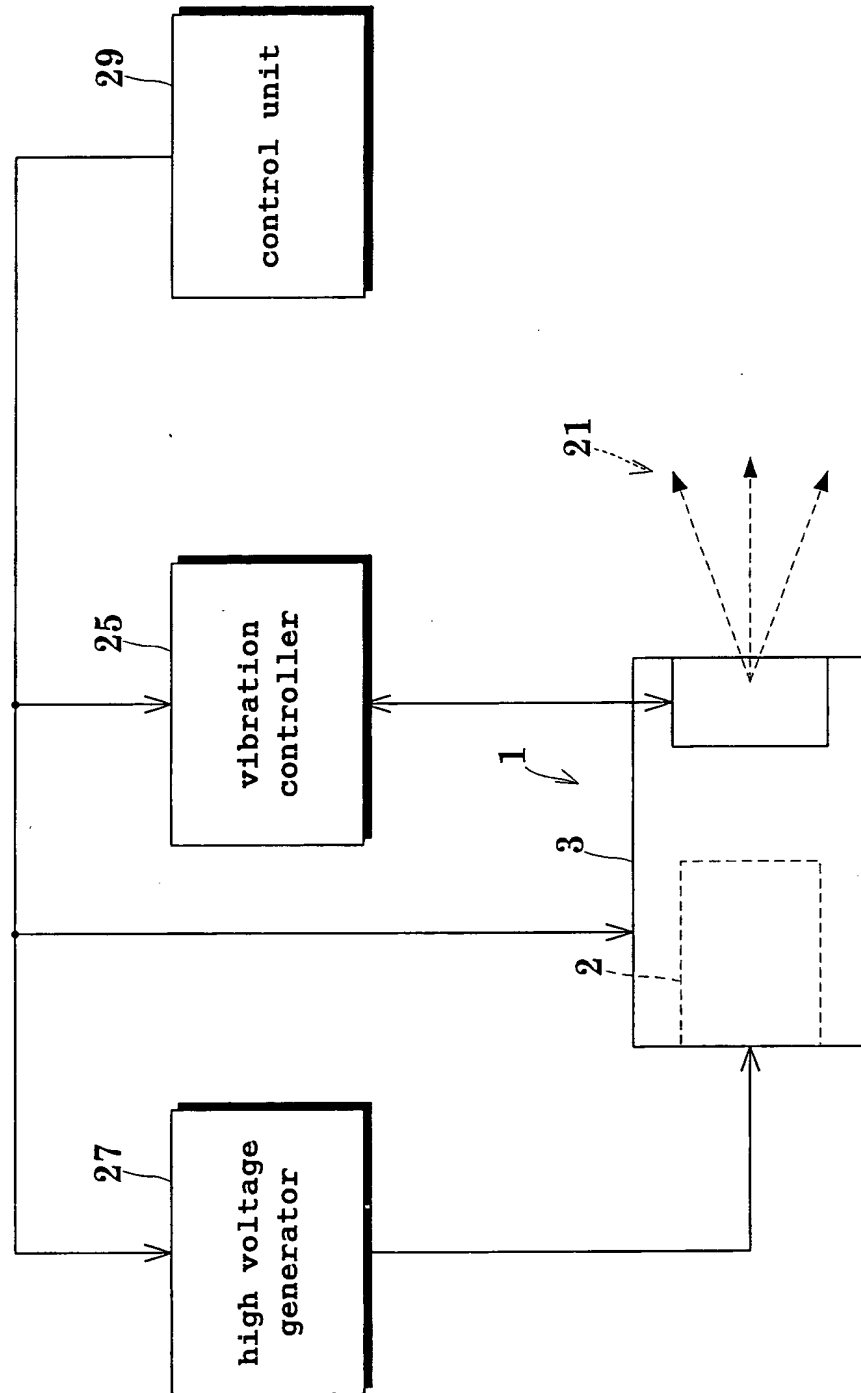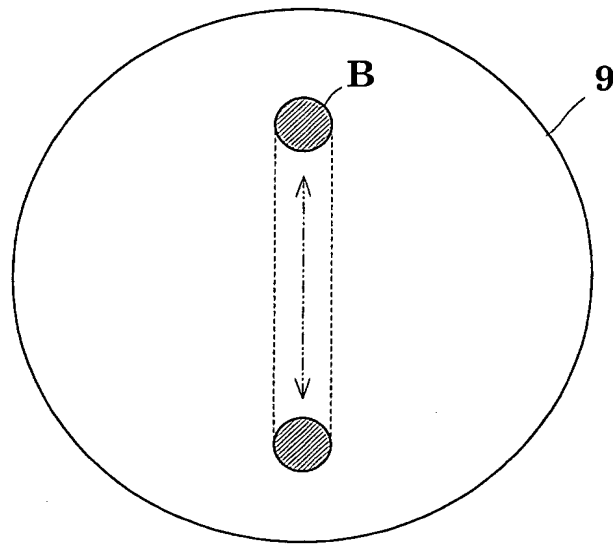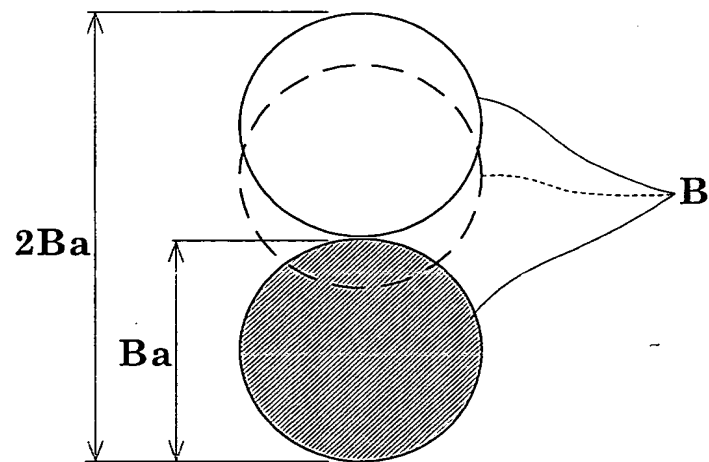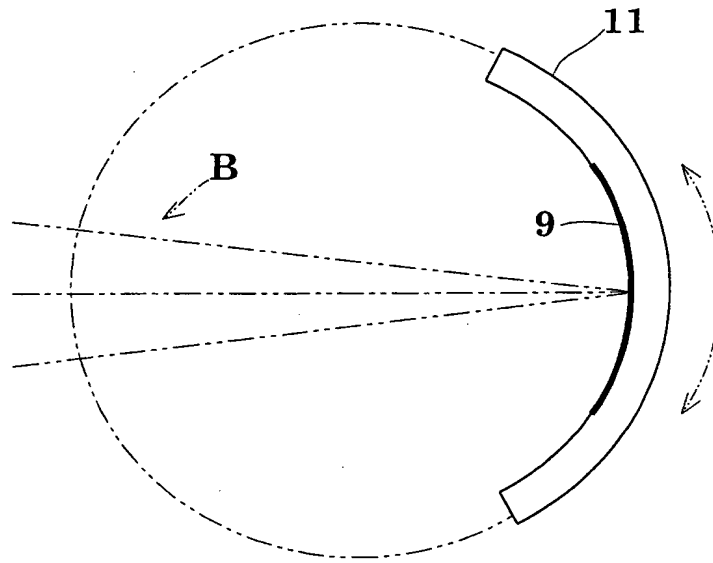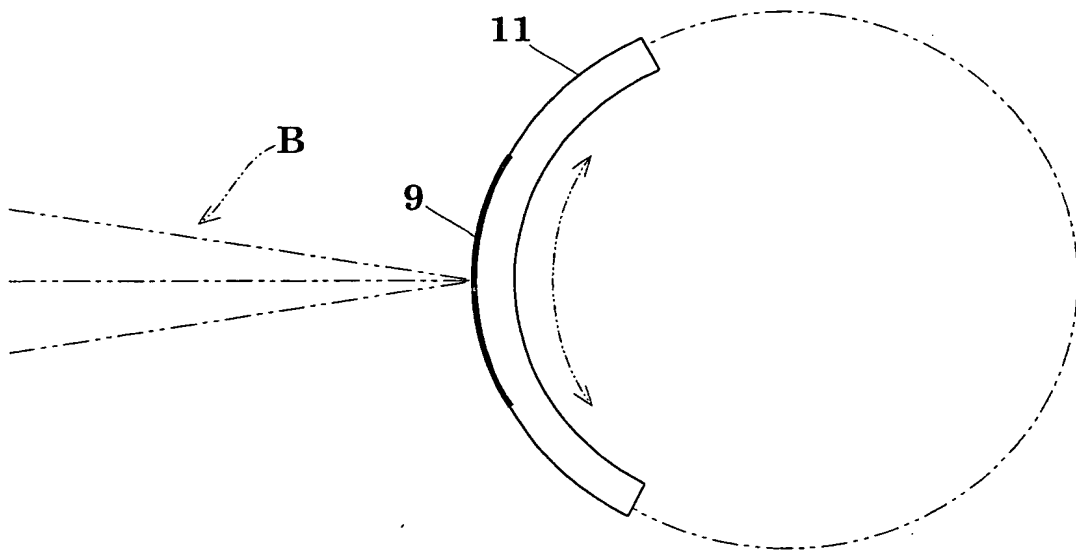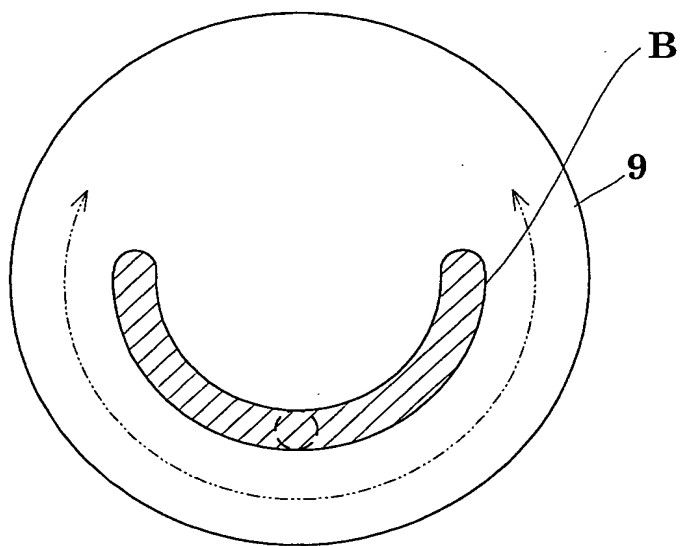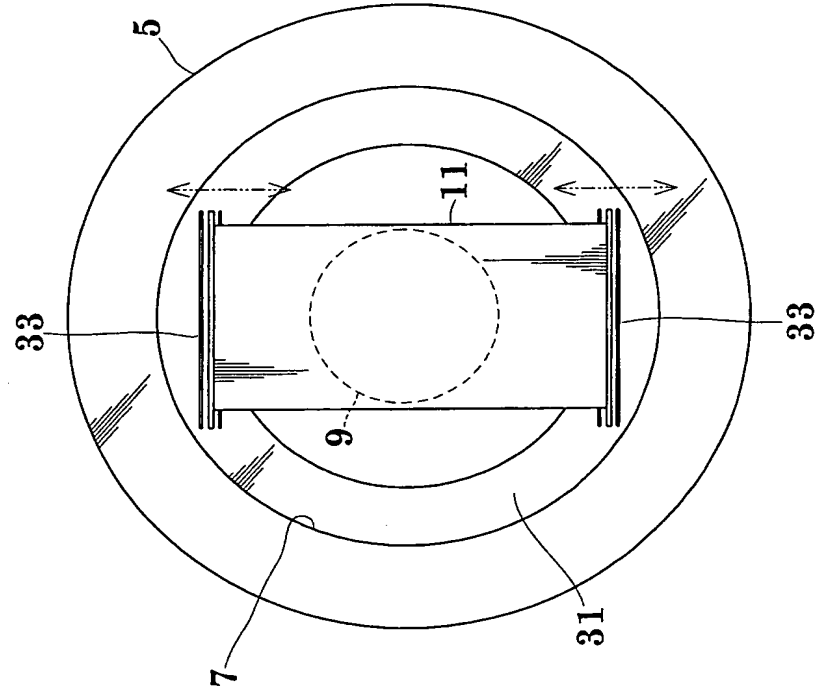
Fig.13A

Fig.13B

Fig.14B

Fig.14A

Fig.15B

Fig.15A

37

Fig.16B

Fig.16A

Fig.17

Fig.18

Fig.19

1A

B

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